

the number of R-DATA messages required (i.e., each required R-DATA message equates to one TTS sequence or segment).

It can be appreciated that this aspect of the invention can be used for transporting Teleservice messages (e.g., SMS messages) using the R-DATA convention and DCCH of, by example, IS-136. It should be further appreciated that the use of this aspect of the invention can also be employed when a DTC is allocated for R-DATA transactions, as was described above in reference to FIGS. 3 and 4.

It is noted that the various message information fields, bit and byte lengths, bit value assignments, numbers of segments between acknowledgement messages, etc., are illustrative and not limiting. Furthermore, the various messages defined in Tables A–D can be modified to delete information elements and/or to add information elements. It should further be realized that the drawing of FIG. 5 can be read as a process flow diagram, or as a block diagram of interconnected hardware and/or software modules.

Thus, while the invention has been particularly shown and described with respect to preferred embodiments thereof, it will be understood by those skilled in the art that changes in form and details may be made therein without departing from the scope and spirit of the invention.

What is claimed is:

1. A method to operate a wireless communications network to transmit a Teleservice message from a source to a destination, comprising:

- at the source, providing a Teleservice message;
- applying the Teleservice message to a segmentation service that segments the Teleservice message into a plurality of segments corresponding to as many air interface messages as are necessary to deliver the Teleservice message;
- applying the segmented Teleservice message to a transmit air interface service;
- delivering the segmented Teleservice message from the transmit air interface service through the air interface to a receive air interface service at the destination;
- applying the received segmented Teleservice message to an assembly service that
- assembles the received segmented Teleservice message into the Teleservice message; and
- transmitting a Response message from the destination, the Response message being formatted for specifying at least a protocol discriminator, a message type, a transaction ID, a status and an acknowledgment map.

2. A method as set forth in claim 1, wherein applying the Teleservice message to a segmentation service includes compressing the Teleservice message.

3. A method as set forth in claim 1, wherein applying the Teleservice message to a segmentation service includes encrypting the Teleservice message.

4. A method as set forth in claim 1, wherein applying the Teleservice message to an assembly service includes decompressing the Teleservice message.

5. A method as set forth in claim 1, wherein applying the Teleservice message to air assembly service includes decrypting the Teleservice message.

6. A method as set forth in claim 1, wherein applying the Teleservice message to a segmentation service includes adding a message header comprising information for specifying a type of compression that is applied to the Teleservice message, if any, and information for specifying a type of encryption that is applied to the Teleservice message, if any.

7. A method as set forth in claim 1, wherein applying the Teleservice message to a segmentation service includes:

- formatting a Begin Message as a first segment;
- formatting a Continue Message for any further segments that are not the last segment; and

- formatting an End Message as the last segment.

8. A method as in claim 7, wherein the Begin Message is formatted for specifying at least a protocol discriminator, a message type, a transaction ID, a sequence number, a segment data length, a Teleservice message length, and segment data.

9. A method as in claim 8, wherein the Begin Message is formatted for further specifying a Teleservice message length.

10. A method as in claim 8, wherein the Begin Message is formatted for further specifying whether data compression was applied.

11. A method as in claim 8, wherein the Begin Message is formatted for further specifying whether data encryption was applied.

12. A method as in claim 8, wherein the Begin Message is formatted for further specifying how often the destination should return receipt confirmation using a Response message.

13. A method as in claim 7, wherein the Continue Message is formatted for specifying at least a protocol discriminator, a message type, a transaction ID, a sequence number, a segment data length and segment data.

14. A method as in claim 7, wherein the End Message is formatted for specifying at least a protocol discriminator, a message type, a transaction ID, a sequence number, a segment data length and segment data.

15. A method as in claim 14, wherein the End Message is formatted for further specifying a CRC calculated over the original Teleservice message.

16. A wireless communications system enabling transmission of a Teleservice message from a source to a destination, comprising:

- at the source, a segmentation service for segmenting a Teleservice message into a plurality of segments corresponding to as many air interface messages as are necessary to deliver the Teleservice message, and a transmit air interface service coupled to an output of the segmentation service for assisting in the delivery of the segmented Teleservice message through the air interface to the destination; and

- at the destination, a receive air interface service having an output coupled to an assembly service for assembling the received segmented Teleservice message into the Teleservice message;

- where said destination transmits a Response message to the source, the Response message being formatted for specifying at least a protocol discriminator, a message type, a transaction ID, a status and an acknowledgment map.

17. A system as set forth in claim 16, wherein the source includes a data compressor for compressing the Teleservice message.

18. A system as set forth in claim 16, wherein the source includes a data encryptor for encrypting the Teleservice message.

19. A system as set forth in claim 16, wherein the destination includes a data decompressor for decompressing the Teleservice message.

20. A system as set forth in claim 16, wherein the destination includes a data decryptor for decrypting the Teleservice message.

21. A system as set forth in claim 16, wherein the segmentation service adds a message header comprising